UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

DATE: 07-APR-2000

SUBJECT: HED Metabolism Assessment Review Committee (MARC) Meeting of 2/22/00. **Prohexadione-Calcium.** PP#8F04941. Chemical No. 112600. Barcode D263502. Case 289440. Submission S543993.

FROM: George F. Kramer, Ph.D., Chemist
Jessica Kidwell, Environmental Protection Specialist
RAB1/HED (7509C)

THRU: Melba S. Morrow, Branch Senior Scientist
RAB1/HED (7509C)

and

Christine Olinger, Chair
HED MARC

TO: George F. Kramer, Ph.D., Executive Secretary
HED MARC

A. Material Reviewed

The MARC reviewed and discussed the material in the 2/14/00 Issues memo of George Kramer and Jessica Kidwell including the results of the plant metabolism (apples and peanuts), livestock metabolism (ruminant and poultry), rat metabolism, rotational crop, analytical methodology, and magnitude of the residue studies for the new plant growth regulator, prohexadione-calcium (calcium 3-oxido-5-oxo-4-propionylcyclohex-3-enecarboxylate).

B. Conclusions

The MARC concluded that only the parent compound needs to be included in the tolerance expression for pome fruit and peanuts and is the only compound included in the dietary and drinking water risk assessments.

The MARC used the following considerations/facts in supporting the conclusions drawn above:

- In the peanut, ruminant, rat, and poultry metabolism studies; the parent compound was the major component of the residue.

- The metabolite BX 112-I5 was the primary metabolite identified in the apple metabolism study. However, residues of BX 112-I5 were less than the LOQ (<0.05 ppm) in all treated samples of apple and pear harvested 45 days following treatment at 1x the maximum proposed seasonal application rate in the crop field trials while residues of prohexadione-calcium were <0.05-2.631 ppm in/on apples and 0.23-0.99 ppm in/on pears.

- Data provided by EFED show that prohexadione calcium degrades to despropionyl prohexadione which degrades further into tricarballylic acid and citric acid, two naturally occurring substances. The two acids are subsequently mineralized to CO_2.

The MARC further concluded:

- Based on their structural similarity to the parent compound, the following metabolites are considered to have equivalent toxicity to prohexadione-calcium: BX 112-I5, BX 112-M10, despropionyl prohexadione, 27F2-B, 25F1-A, and 27F2-A.

- Additional metabolism data will be required for any new use in addition to pome fruit and peanuts. If any of the aforementioned metabolites comprise a significant portion of the residue, then HED may request that the petitioner provide field residue data for such metabolites.

C. Individuals in Attendance

1. MARC Members

George Kramer, Leung Cheng, Alberto Protzel, Nancy Dodd, Kit Farwell, William Wassell, Sanjivani Diwan, Chris Olinger

2. MARC Members in Absentia

John Doherty

3. Scientists (non-MARC members)

Jessica Kidwell, Iwona L. Maher

4. Scientists in Absentia (non-MARC members)

none

cc: PP# 8F04941, G. Kramer (RAB1), J. Kidwell (RAB1), HED MARC file (G. Kramer), Cynthia Giles-Parker (RD), Francis Griffith (BEAD-7503C)
RDI: M. Morrow (3/6/00), RAB1 Chemistry Team (3/2/00)
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